

CLAIMS

We claim:

1. An array hybridization apparatus for holding a slide, comprising:
 - (a) a thermoplastic substrate opposite said slide for acting as a backing for said array hybridization apparatus;
 - (b) a gasket interposed between said slide and said substrate; and
 - (c) a spacer interposed between said slide and said substrate and adjacent to said gasket wherein an array hybridization chamber is defined between said slide, said thermoplastic substrate, said gasket and said spacer when said slide and said substrate contact said gasket and said spacer and wherein said thermoplastic substrate is held flat.
2. An array hybridization apparatus as recited in claim 1, wherein said gasket comprises a substantially deformable material.
3. An array hybridization apparatus as recited in claim 1, wherein said spacer comprises a substantially non-deformable material.
4. An array hybridization apparatus as recited in claim 1, wherein said gasket is attached to said slide.
5. An array hybridization apparatus as recited in claim 1, wherein said gasket is attached to said thermoplastic substrate.
6. An array hybridization apparatus as recited in claim 1, wherein said gasket comprises a portion of said thermoplastic substrate.
7. An array hybridization apparatus as recited in claim 1, wherein said gasket is attached to both said slide and said thermoplastic substrate.

8. An array hybridization apparatus as recited in claim 1, wherein said spacer is attached to said slide.
9. An array hybridization apparatus as recited in claim 1, wherein said spacer is attached to said substrate.
10. An array hybridization apparatus as recited in claim 1, wherein said thermoplastic substrate further comprises a back side having at least one support ridge extending along the length of the thermoplastic backing.
11. An array hybridization apparatus as recited in claim 1, wherein said thermoplastic backside of said thermoplastic substrate comprises a least one support ridge extending across the width of the thermoplastic backing.
12. An array hybridization apparatus as recited in claim 1, wherein said spacer is attached to both said slide and said thermoplastic substrate.
13. An array hybridization apparatus as recited in claim 1, wherein said spacer comprises a material selected from the group consisting of polyurethanes, plastics, acrylics, metals and non-deformable or less deformable polymers.
14. An array hybridization apparatus as recited in claim 1, wherein said spacer is between 25 to 500 microns in height.
15. An array hybridization apparatus as recited in claim 11, wherein said array hybridization chamber is between 25 to 1000 microns in height.

16. A method of making an array hybridization apparatus having an array hybridization chamber comprising:

- a. providing a slide, a thermoplastic substrate, gasket and spacer; and
- b. contacting said slide, thermoplastic substrate, gasket and spacer to define a uniform array hybridization chamber wherein said thermoplastic substrate is held flat.

17. A method of making an array hybridization apparatus with an array hybridization chamber of uniform volume, comprising:

- a. providing a slide opposite a thermoplastic substrate;
- b. interposing a gasket and spacer between said slide and said thermoplastic substrate;
- c. contacting said slide, said thermoplastic substrate, said gasket and said spacer to define a chamber there between wherein said thermoplastic substrate is held flat.